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REMARKS

Applicants appreciate the Office Action of September 14, 2004. Applicants have not provided a listing of Claims as no claim amendments have been made. Applicants respectfully submit that the pending claims are patentable over the cited references for at least the reasons discussed below. Accordingly, Applicants respectfully submit that the pending claims are in condition for allowance, which is respectfully requested in due course.

Independent Claims 1, 20, 22 and 33 are Patentable Over the Cited Combination

Claims 1-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,594,699 to Sahai *et al.* (hereinafter "Sahai") in view of United States Patent No. 6,697,849 to Carlson (hereinafter "Carlson"). See Office Action, page 2. Applicants respectfully submit that many of the recitations of these claims are neither disclosed nor suggested by the cited combination. For example, Claim 1 recites:

A method for type of service classification of a communication request for an application executing on a server, the method comprising the steps of:
providing an application plug-in associated with the application in an operating system kernel of the server;
wherein the application plug-in performs the following steps:
receiving the communication request;
obtaining application level information from the received communication request;
assigning a type of service classification to the received communication request based on the obtained application level information; and
providing the assigned type of service classification information for the communication request to a process executing on the server for processing communications from the server responsive to the communication request.

Claims 20 and 22 and Claim 33 contain corresponding system and computer program product recitations, respectively. Applicants submit that at least the highlighted portions of Claim 1 are neither disclosed nor suggested by the cited combination.

The Office Action states that Sahai teaches all the recitations of Claim 1, except the step of providing an application plug-in associated with the application in an operating system kernel

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of the server. See Office Action, pages 2-3. In particular, a portion of Sahai cited in the Office Action recites:

In this system 8, a user (not shown) makes a request for a multimedia resource, typically a streamable resource or one capable of being streamed, such as video data, from the server 10 using the client 12 over the network 14 using a universal resource locator (URL). The locator indicates the multimedia data to be streamed or transferred. As will be discussed in more detail below, the server 10 obtains client capabilities and user preferences from the client 12 and responds to the transfer request by streaming the data over the network 14 to the client 12 based on the capabilities and preferences.

The capability based and user specifiable streaming of the present invention allows a three way communication to take place among the server 10, the client 12 and the end-user before the data gets streamed from the server 10 to the client 12. The information of this communication preferably overrides the delivery properties of the asset determined at installation time.

When the user wants to playback any video/multimedia asset by "clicking-on" it in the client 12, not only does this "play" request get shipped across to the server 10 (which is typically the case), but along with it and at the essentially same time a set of "capabilities" of the client 12 are also shipped from the client 12 to the server 10...

With the above-discussed information about the client 12 and the end-user preferences, the server 10 performs: asset selection and media data adaption; server, network and client resource allocation based on the client capability and preferences; and then starts the streaming of the multimedia data to the client 12. The above information enables the server 10 to make flexible and accurate decisions about the clients concerning resource allocation for streaming of data.

See Sahai, column 2, line 55 to column 3, line 11 and column 4, lines 31-39. In other words, Sahai discusses an application running on a server that is configured to format and adapt media data based on client capabilities and/or user preferences, *i.e.*, Sahai discusses the details of an application at the application level. In particular, Sahai describes a system in which a user clicks on a hyperlink presented on a browser, for example, Netscape, to provide a request and, in response to the request, a set of capabilities of the client 12 are sent to the server 10. User preferences may also be obtained by the server 12 and the server 12 may process the request by formatting the data and adapting it using the provided client capabilities and/or user preferences. Accordingly, Sahai discusses an application running on a server configured to receive data from the client and format/adapt the data based on client capabilities and/or user preferences.

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In contrast, embodiments of the present invention provide **an application plug-in** associated with an application in an operating system kernel of the server. In other words, the plug-in is part of the kernel of the operating system, *i.e.* the core of the operating system that handles resource allocation, hardware interfaces, and the like, not part the application level modules. A plug-in, by definition, is a module that can be added to a computer application that may provide added functionality to the application. In particular, as stated in the specification:

The TCP/IP kernel 355, as shown in **Figure 3**, communicates with the communication network 325 through a router/bridge device 320. Where the router/bridge device 320 is a router, it typically routes communications packets **based on level 4 information**, such as destination IP address. Where the router/bridge device 320 is a bridge, it may process communications within a network node **using level 3 information**, such as machine identification number, rather than level 4 IP address information.

See Specification, page 14, line 25 to page 15, line 2 and Figure 3. In other words, the TCP/IP kernel 355 of the operating system does not typically obtain (or see) application level data, for example, TCP/IP level 5 or above data, from a received communication request. Thus, according to some embodiments of the present invention, the application plug-in process 365 provides the added functionality of obtaining application level information at the TCP/IP kernel 355 from the received communication request and assigning a type of service classification to the received communication request based on the obtained application level information. See Specification, page 15, line 23 to page 16, line 14. The type of service classification may be provided to the communication process 360 so as to allow the communication process 360 to process outgoing communications from the server based on the type of service classification assigned.

Nothing in Sahai discloses or suggests an application plug-in **at the kernel of the operating system** that adds the capability of obtaining application level data to the functionality of the operating system. Furthermore, nothing in Sahai discloses or suggests obtaining application level information from the received communication request at the kernel of the operating system, assigning a type of service classification to the received communication request based on the obtained application level information or providing the assigned type of service classification information for the communication request to a process executing on the server for processing communications from the server responsive to the communication request.

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as recited in Claim 1. Accordingly, Sahai fails to disclose or suggest the recitations of Claim 1 for at least the reasons discussed above.

As discussed above, the Office Action admits that Sahai fails to explicitly teach providing an application plug-in as recited in the claims of the present invention. *See* Office Action, page 3. However, the Office Action states that Carlson provides the missing teachings. *See* Office Action, page 3 (citing Figures 4-6, col. 7, line 60 to col. 8, lines 1-32). Applicants respectfully disagree.

The cited portion of Carlson recites, in part:

FIG. 4 illustrates several system-level services which may be involved in managing application server requests. In one embodiment, these system-level services may be managed by an executive server process such as described above with reference to the FIG. 3 application server.

FIG. 4 illustrates a protocol manager service 220. The protocol manager service 220 is responsible for managing network communication between the application server 230 and clients of the application server. For example, FIG. 4 illustrates a web server client 240 which comprises a standard web server extension or plug-in 242. The web server plug-in 242 may be any of various well-known types of plug-ins enabling web servers to communicate with other systems, including NSAPI, ISAPI, optimized CGI, etc. As shown, the protocol manager service 220 includes "listener" modules or components, e.g. an NSAPI listener, ISAPI listener, etc., for communicating with the web server plug-in. The listener modules may communicate with the web server plug-in via the standard HTTP or HTTPS protocols.

See Carlson, column 10, lines 2-19 and corresponding Figure 4 (emphasis added). In other words, although Carlson discusses a conventional plug-in 242, the plug-in enables the web servers to communicate with other systems via standard HTTP or HTTPS protocols. Conventional plug-ins typically are included as part of an application and communicate application level information, for example, HTTP or HTTPS. It does not appear that any portion of Carlson discusses where the plug-in 242 is located in the web server 240. Accordingly, nothing in Carlson appears to disclose or suggest an application plug-in located in an operating system kernel of the server as recited in Claim 1. In particular, nothing in Carlson discloses or suggests an application plug-in at the kernel of the operating system that adds the capability of obtaining application level data to the functionality of the operating system that typically only receives level 3 or level 4 information as recited in Claim 1 of the present invention.

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Furthermore, nothing in Carlson discloses or suggests obtaining application level information from the received communication request at the kernel of the operating system, assigning a type of service classification to the received communication request based on the obtained application level information or providing the assigned type of service classification information for the communication request to a process executing on the server for processing communications from the server responsive to the communication request as recited in Claim 1. Accordingly, Carlson fails to disclose or suggest the recitations of Claim 1 for at least the reasons discussed above.

Accordingly, none of the cited references either alone or in combination disclose or suggest many of the recitations of Claim 1 set out above. Furthermore, there is no motivation or suggestion to combine the cited references as suggested in the Office Action. As affirmed by the Court of Appeals for the Federal Circuit in *In re Sang-su Lee*, a factual question of motivation is material to patentability, and cannot be resolved on subjective belief and unknown authority. See *In re Sang-su Lee*, 277 F.3d 1338 (Fed. Cir. 2002). It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 312-13 (Fed. Cir. 1983).

The Office Action states:

One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify *Sahai* in view of *Carlson* to have the process of providing an application plug-in associated with the application in an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

See Office Action, page 3 (emphasis in original). This motivation is, at most, a motivation based on "subjective belief and unknown authority," the type of motivation that was rejected by the Federal Circuit in *In re Sang-su Lee*. In other words, the Office Action does not point to any specific portion of the cited references that would induce one of skill in the art to combine the cited references as suggested in the Office Action. Accordingly, the statement in the Office Action with respect to motivation does not adequately address the issue of motivation to combine

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as discussed in *In re Sang-su Lee*. Thus, it appears that the Office Action gains its alleged impetus or suggestion to combine the cited references by hindsight reasoning informed by Applicants' disclosure, which, as noted above, is an inappropriate basis for combining references.

Furthermore, as discussed above, Sahai discusses an application running on a server configured to receive data from the client, format/adapt the data based on client capabilities and/or user preferences and send the modified data to the client. Carlson, on the other hand, discusses a system and method for caching JavaServer Page component responses that includes a web server including a conventional plug-in as discussed above. See Carlson, Abstract. Nothing in the cited references or the art itself would motivate a person of skill in the art to combine the data streaming application of Sahai with the caching component response system of Carlson. Furthermore, even if Sahai and Carlson could be properly combined, the combination of Sahai and Carlson would teach a data streaming application having a conventional plug-in in one or more web servers that enable the web servers to communicate with other systems via standard HTTP or HTTPs protocols. Accordingly, even if the cited references could be properly combined, the cited combination fails to teach an application plug-in provided in the kernel of the operating system used to obtain application level data from a communication request to assign type of service classifications as recited in Claim 1 of the present invention.

Accordingly, Applicants respectfully submit that Independent Claims 1, 20, 22 and 33 are patentable over the cited combination for at these additional reasons. Furthermore, dependent Claims 2-19, 21, 23-32 and 34-43 are patentable at least per the patentability of Independent base Claims 1, 20, 22 and 33 from which they depend. Accordingly, Applicants submit that Independent Claims 1, 20, 22 and 33 and the claims that depend therefrom are in condition for allowance, which is respectfully requested in due course.

CONCLUSION

Applicants respectfully submit that pending claims are in condition for allowance for at least the reasons discussed above. Thus, allowance of the pending claims is respectfully requested in due course. Favorable examination and allowance of the present application is respectfully requested.

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